

What is claimed is:

1. A method for constructing a concrete sandwich panel, comprising the steps of:
 - a) providing a first concrete panel;
 - 5 b) providing a second concrete panel;
 - c) providing an insulation layer between the two concrete panels; and
 - d) connecting the concrete layers and the insulation layer using a sinusoidal element comprised of a fiber-reinforced composite article.
- 10 2. A method for constructing a concrete sandwich panel, comprising the steps of:
 - a) providing an insulation layer;
 - b) installing a sinusoidal element comprising a fiber-reinforced composite article;
 - c) placing a the insulation layer with the installed sinusoidal element on a first concrete layer; and
 - 15 d) placing a second concrete layer on top of the insulation layer.
3. A method for constructing a concrete sandwich panel, comprising the steps of:
 - a) attaching sinusoidal elements to longitudinal reinforcing elements;
 - b) preparing a first concrete layer containing the longitudinal reinforcing elements;
 - 20 c) placing an insulation layer between the sinusoidal elements; and
 - d) placing a second concrete layer over the insulation layer.

4. A method for constructing a concrete sandwich panel, comprising the steps of:
- a) providing a first concrete layer with longitudinal reinforcing elements in place;
 - b) installing an insulation layer over the first concrete layer;
 - c) pushing sinusoidal elements into the insulation layer; and
 - d) placing a second concrete layer with longitudinal reinforcing elements on the insulation layer.
5. The method of claim 4 wherein the sinuous elements have depth indicators.
- 10 6. An insulated concrete wall panel without pre-stressed reinforcing rods comprising:
- a) a first layer of concrete;
 - b) a second layer of concrete;
 - c) a layer of insulation material between said layers of concrete;
 - d) a sinusoidal element with a top end and a bottom end;
 - e) said sinusoidal element further comprising a fiber-reinforced composite article;
 - f) said sinusoidal element having said top end located in said first layer of concrete and extending through said insulation layer and having said bottom end embedded in said second layer of concrete.
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7. An insulated concrete wall panel comprising:
- a) a first layer of concrete;
 - b) a second layer of concrete;
 - c) a layer of insulation material between said layers of concrete;
 - 5 d) a sinusoidal element with a top end and a bottom end;
 - e) said sinusoidal element further comprising a fiber-reinforced composite article;
 - f) said sinusoidal element having said top end located in said first layer of concrete and extending through said insulation layer and having said bottom end embedded in said second layer of concrete; and
 - 10 g) said sinusoidal element is not engaged with any pre-stressed reinforcing rods.